Automotive Outlook
2018 FTA Revenue Estimation & Tax Research Conference

October 8, 2018
Kim Hill, President
Agenda

• Economic factors
• Forecast of sales – next three years
• Rise of the trucks
• Revenue implications for car replacement by trucks and new for used vehicles
State of Automotive (it’s kind of boring...)

• Sales on a plateau—market is flat
• Educated, better off households in the market
• Potential for revenue loss with slowing sales and increased used vehicle sales
• Average transaction price is higher—driven by truck sales—$35,000
• Many car models are being discontinued—rise of the trucks
• New technologies adding cost, uncertainty, fear...
Economic factors
Real GDP 9/2008 through 9/2018

Consumer Confidence Index 08/2008 through 08/2018

Source: OECD (data.oecd.org)
Household Income 08/2008 through 08/2018

Source: BMI Research - Fitch Solutions/National Statistics
USA - Total Employment 08/2008 through 08/2018

Source: BMI Research - Fitch Solutions/Bureau of Labor Statistics
USA – Total Unemployment 08/2008 through 08/2018

USA – New Home Prices 08/2008 through 08/2018

“Housing market slows as prices outpace wages” — Will we see the same with auto?

USA – Existing Home Prices 08/2008 through 08/2018

Automotive Sales
U.S. Light Vehicle Sales
Percent Change YTD Through August: 2018 vs. 2017

- Passenger Cars: -13.1%
- Light Trucks: 9.3%
- Total: 1.1%
Percent Change in Sales of Light Vehicles Per OEM:
YTD Through August: 2018 vs. 2017

- Nissan: -5.2%
- FCA: 5.2%
- Honda: -1.3%
- Hyundai-Kia: -1.8%
- Ford: -1.2%
- Toyota: 1.0%
- GM: 0.9%

TOTAL LV Sales: 1.1%
The automotive companies are all playing to their strengths—and holding market share.
U.S. Sales on a Declining Plateau? We hope...
<table>
<thead>
<tr>
<th>Source</th>
<th>Forecast (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HWA Analytics, LLC</td>
<td>17.0 (9/18)</td>
</tr>
<tr>
<td>OESA</td>
<td>17.0 (8/18)</td>
</tr>
<tr>
<td>COX Automotive</td>
<td>17.0 (8/18)</td>
</tr>
<tr>
<td>IHS Global Insight</td>
<td>16.8 (8/18)</td>
</tr>
<tr>
<td>LMC Automotive</td>
<td>17.2 (8/18)</td>
</tr>
</tbody>
</table>
Revenues Have Never Been Higher

Bubble economy helped sales 99-06; recession took wind out 08-10; post recession growth and efficiencies 2011-present

Both spending and vehicle sales exceed 2006 level
Average sale price grew 3% in one year—driven by truck sales

- Cars make up only 31 percent of August sales,
- Down from 36 percent just one year ago,
- Consumers purchasing pricier SUVs and trucks.
- Prices also are likely to strengthen as the average days in inventory has begun to recede for the first time this decade
- Automakers seem to be managing production well—keeping prices high
### Average transaction price=

**More profits**

<table>
<thead>
<tr>
<th>Segment</th>
<th>July 2018</th>
<th>Jul-17</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact Car</td>
<td>$20,412</td>
<td>$20,316</td>
<td>0.50%</td>
</tr>
<tr>
<td>Mid-size Car</td>
<td>$25,424</td>
<td>$24,734</td>
<td>2.80%</td>
</tr>
<tr>
<td>Compact SUV/Crossover</td>
<td>$28,365</td>
<td>$28,122</td>
<td>0.90%</td>
</tr>
<tr>
<td>Electric Vehicle</td>
<td>$36,948</td>
<td>$37,755</td>
<td>-2.10%</td>
</tr>
<tr>
<td>Hybrid/Alternative Energy Car</td>
<td>$26,969</td>
<td>$26,309</td>
<td>2.50%</td>
</tr>
<tr>
<td>Full-size Pickup Truck</td>
<td>$48,644</td>
<td>$46,475</td>
<td>4.70%</td>
</tr>
<tr>
<td>Full-Size SUV/Crossover</td>
<td>$61,557</td>
<td>$60,761</td>
<td>1.30%</td>
</tr>
<tr>
<td>High-end Luxury Car</td>
<td>$98,360</td>
<td>$95,874</td>
<td>2.60%</td>
</tr>
<tr>
<td>Luxury Car</td>
<td>$59,519</td>
<td>$57,562</td>
<td>3.40%</td>
</tr>
<tr>
<td>Luxury Compact SUV/Crossover</td>
<td>$44,524</td>
<td>$42,899</td>
<td>3.80%</td>
</tr>
<tr>
<td>Luxury Full-size SUV/Crossover</td>
<td>$88,038</td>
<td>$81,811</td>
<td>7.60%</td>
</tr>
<tr>
<td>Minivan</td>
<td>$34,635</td>
<td>$34,174</td>
<td>1.30%</td>
</tr>
<tr>
<td>Subcompact Car</td>
<td>$15,026</td>
<td>$14,925</td>
<td>0.70%</td>
</tr>
<tr>
<td>Subcompact SUV/Crossover</td>
<td>$24,008</td>
<td>$24,152</td>
<td>-0.60%</td>
</tr>
<tr>
<td>Van</td>
<td>$34,902</td>
<td>$33,696</td>
<td>3.60%</td>
</tr>
<tr>
<td><strong>Average Transaction price</strong></td>
<td><strong>$35,359</strong></td>
<td><strong>$34,374</strong></td>
<td><strong>2.90%</strong></td>
</tr>
</tbody>
</table>
## Transaction price change—by company

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>July-18</th>
<th>July-17</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Honda (Acura, Honda)</td>
<td>$28,179</td>
<td>$27,346</td>
<td>3.0%</td>
</tr>
<tr>
<td>Fiat Chrysler (Alfa Romeo, Chrysler, Dodge, Fiat, Jeep, RAM)</td>
<td>$37,666</td>
<td>$37,490</td>
<td>0.5%</td>
</tr>
<tr>
<td>Ford Motor Company (Ford, Lincoln)</td>
<td>$39,756</td>
<td>$38,210</td>
<td>4.0%</td>
</tr>
<tr>
<td>General Motors (Buick, Cadillac, Chevrolet, GMC)</td>
<td>$40,889</td>
<td>$39,546</td>
<td>3.4%</td>
</tr>
<tr>
<td>Hyundai-Kia</td>
<td>$25,090</td>
<td>$25,178</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Nissan North America (Nissan, Infiniti)</td>
<td>$29,550</td>
<td>$28,802</td>
<td>2.6%</td>
</tr>
<tr>
<td>Subaru</td>
<td>$28,637</td>
<td>$28,451</td>
<td>0.7%</td>
</tr>
<tr>
<td>Toyota Motor Company (Lexus, Toyota)</td>
<td>$32,321</td>
<td>$31,593</td>
<td>2.3%</td>
</tr>
<tr>
<td>Volkswagen Group (Audi, Volkswagen, Porsche)</td>
<td>$40,577</td>
<td>$38,983</td>
<td>4.1%</td>
</tr>
<tr>
<td><strong>Industry</strong></td>
<td><strong>$35,359</strong></td>
<td><strong>$34,374</strong></td>
<td><strong>2.9%</strong></td>
</tr>
</tbody>
</table>
The trucks are taking over
Are Low Gas Prices Affecting the Mix?

Dollars per Gallon

- Real Gas Price
- Cars Share of Sales
- Light Trucks Share of Sales

$2.83/gal.

31%
69%

Mar/03 - Aug/18

$2.83/gal.
Implications for states
Automation threatens jobs in plants and at supplier companies.
Implications for states—sliding car production threatens jobs

- Illinois—Taurus at Chicago (also Explorer, though)
- Michigan—Flat Rock (Continental, Mustang); Lansing (Camaro, Cadillac); Orion (Sonic, Bolt); FCA already bailed...
- Ohio—Lordstown (Cruze)
- Kentucky—Georgetown (Lexus, Avalon, Camry)
- Kansas—Fairfax (Malibu)
- Tennessee—Chattanooga (Passat—small SUV could help)
- Alabama—Montgomery (Hyundai-Sonata, Elantra)
- Mississippi—Blue Springs (Corolla)
- California—Fremont (Tesla)
Trump and Trade

- NAFTA replacement—more U.S. production predicted for foreign automakers
- More engine, transmission production in U.S. to meet content quotas
  - Typically $300-$500 million investment in new plant, up to 750 employees
- 75% built in N.A.—up from 62%
- 40% - 45% of vehicle made by $16/hr employees
- Non-compliance vehicles—2.5% tariffs
- Automakers who source a lot of parts from overseas at risk—Hyundai, Kia, VW
- Phased in over 2-5 years (enough time to build a plant and find domestic suppliers)
- Steel and aluminum tariffs still in place—Will impact suppliers and OEMs
- Higher required N.A. content will increase jobs in N.A. but maybe not U.S.
- In the end, companies will adjust and cost will not climb and more plants will be built in U.S.
How the Industry Is Changing

• Substitution used for New Vehicle Purchases
• Higher New Vehicle Prices
• Costly post 2020 regulations—these could go away
• Advanced safety features driving up costs
• Technological changes are a bumpy road
  — Distracted driving (unintentional), automated vehicle crashes, Luddites...
How the Industry is Not Changing: Yet

- Automated trucks—Amazon, Uber, UPS – much talk, no action
- Autonomous cars
  - Drivers needed? –Always—for now.
  - Can’t run automated in bad weather or on bad roads
  - No regulatory push from NHTSA under current administration
  - No funding for true connectivity
  - Yet some driver assist safety features will be implemented
- Ride sharing is not growing quickly
  - Ride-share, on-demand, only replaces taxis and rent-a-cars for travelers – maybe a $30 billion annual market
- Scooters, most other micro-transit options do not impact sales
Understanding Autonomous

- Talent is (still) number one issue, and not getting easier
  - No less than Mary Barra (GM) is recruiting at Harvard University, MIT and Boston University
- Perhaps we follow the NASDAQ, as there are so many tech companies crossing over to autonomous vehicles/mobility
- Are autonomous vehicles a means to solve society’s problems (emissions, congestion, highway deaths, etc.), or a plan to make sure everyone can access a car, and technology captures the data?
Time to follow the NASDAQ?
These Will Affect State Revenue Stream

- Light Truck Share/production
- Used for New Purchases
- Trade Impacts
- Used vehicles cost $14K less times sales/use tax rates—no jobs multiplier (except dealer)
Strong Economy Maintaining Vehicle Sales

The Good:

• Economy growing at 3% or higher (2nd Q 4.2%)
• Unemployment at record low of 3.9% (was 4.4% a year ago)
• Duration of unemployment is very short (9 weeks or less)
• Dow-Jones at record peak (again)
• Wages are climbing just above inflation (finally)
• Gas prices at or below $3/gallon—see oil below

The Bad:

• Labor force participation is still low – Total employment growth is slow—stuck around 63%
• Loan rates are rising, amount borrowed over 90%
• Record leasing levels producing flood of returning, used vehicles (soon, used CUVs)
• Record price gap between new vehicle and used vehicle prices – buyers switching
• Hiring is slow due to labor shortages--
• Price of oil is surging to $80/barrel and beyond– Gas could climb over $3 unless U.S. output surges

The Ugly:

• CUVs/SUVs/Pickups are expensive ($35,000 avg price for all vehicles), used vehicle sales are climbing fast
• Economic recovery is very old – a correction is inevitable – especially in auto sales and stock market (see upcoming election...)
• Plug-in sales are less than 1%, Hybrids about 2% - no growth and no push from federal govt. This could change with Democrats in 2020.
• Fuel economy regulations will top out now in 2020 – but Democrats could reverse that in 2020. Industry won’t be ready